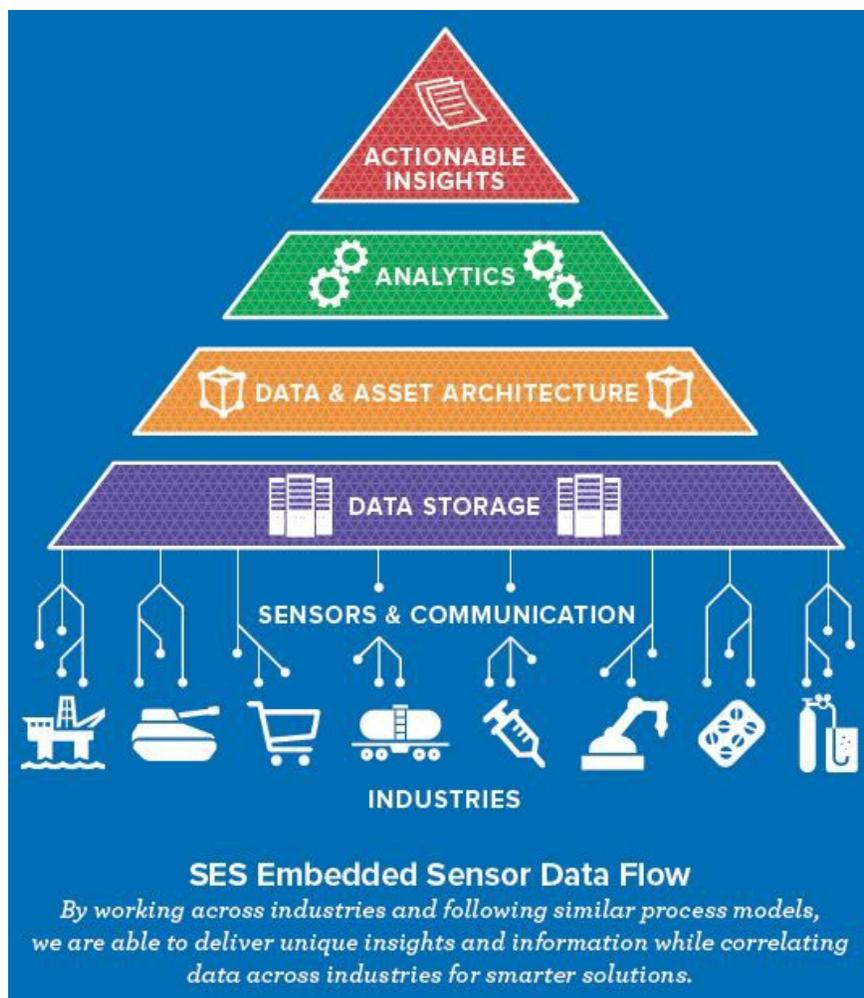


## Creating Competitive Advantage with the Industrial Internet of Things

The Industrial Internet of Things (IIoT) connects machines, people and complex analytics to leverage data in ways that can revolutionize the way people and companies operate. By collecting, monitoring and analyzing millions of data points, Stress Engineering is able to uncover insights that were once hidden. We can then use these insights to create unique solutions that not only overcome technical challenges, but change the game, increase speed to market and improve the likelihood of success for products in-market.

For many clients, IIoT is about the development and/or retrofit of products, equipment and manufacturing systems with sensors and software, interpretive analytics and automated communications mechanisms for data viewing, plus the implementation of machine learning algorithms. All of this leads to new insights that benefit our clients and their customers. Key to our success in this field is the diversity of experience we accumulated, long before this new Industrial Revolution began.



Although the most publicized aspects of IIoT seem to be focused on data science, backend servers, dashboards and edge or cloud computing, a key technology kernel that makes all of it possible is the ability to generate and capture previously invisible high quality, relevant data streams. These typically huge data sets need to be processed using data analytics that coax out performance attributes, insights and relationships related to other measurable or observable responses to enable predictions and actions based on these new combinations of information. Stress Engineering is also involved in using these data streams, combined with other streams, like GPS and weather, to evaluate and validate the utility of machine learning algorithms.

The objective of Stress Engineering's early work was identical to what we are providing today in the IIoT space-measuring attributes that traditionally could not be measured, analyzing and interpreting the data sets to determine their relationship to other information and process variables, and developing statistical models to characterize the outcomes-all to help our clients develop a competitive advantage. The big difference today is that the data is streamed from the sensors, either through edge or cloud computers, in real- or near real-time with the analytics and insights available on a continuous basis. This translates to your bottom line by providing

accelerated responsiveness to situations that can impact your business.

Our Portfolio of IIoT-Related Experience Includes:

- Amusement Park Attractions
- Consumer Product Manufacturing
- Food and Beverage
- Medical Device and Medical-Related Consumables
- Oil and Gas
- Petrochem and Refining
- Pharmaceutical Manufacturing
- Transportation
  - Freight and Commuter Rail
  - Automotive
  - Aerospace
- U.S. Government
  - Department of Defense "in Theater" Asset Tracking and Maintenance
  - U.S. Forest Service Aircraft

If you need a strategy for generating relevant data from your existing equipment, we can do the heavy lifting!

## Technical Resources

[Industrial Internet of Things](#)

[Custom Sensor Development for IIoT and Machine Learning](#)

Missed our previous newsletter?

Click [here](#) to read about our ISTA Testing Laboratory Certification.

Stress Engineering Services, Inc. (SES) offers an integrated team of experts in creative design, functional engineering, design for manufacturing, materials, cost analysis, and reliability to deliver the highest level of innovation and technical success in developing products and packaging. SES provides expert engineering consulting services for:

- New Product Development
- Material Science
- Risk Assessment
- Human Factors
- Failure Analysis
- Package Development
- Testing
- Industrial Design

SES has extensive laboratory testing capabilities for evaluating materials, product performance, life assessment, and failure analysis. We have extensive simulation capabilities to predict mechanical, thermal, and fluid flow characteristics of complex problems.

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